

STATE OF MONTANA



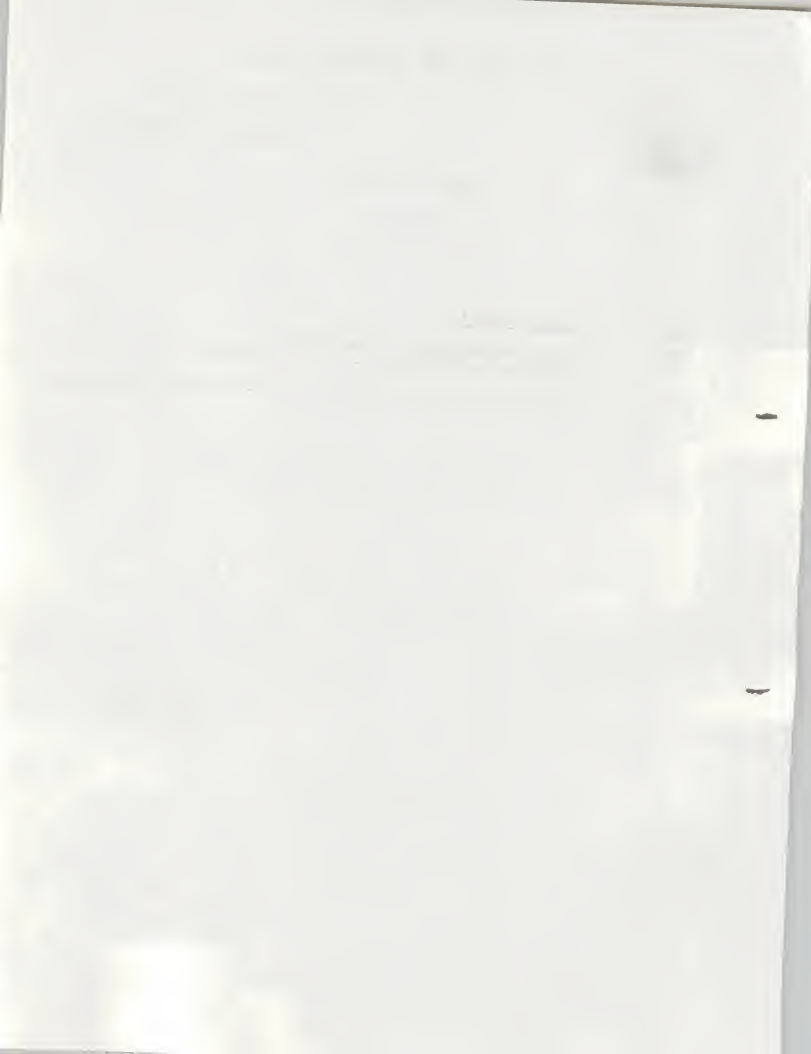
DEPARTMENT OF FISH AND GAME

TABLE OF CONTENTS

Statewide

Deer

<u>Year</u>	<u>Title of Report</u>
1952	Special Doe Seasons in Montana (1946) Population Studies of Deer - Fort Peck Game Range and Vicinity
1955	Eastern Montana Deer Population Studies - Checking Station Analysis



STATE	Montana
PROJECT NO.	W-59-R-2
DATE	April 15, 1955
VOL.	VI NO. 1 & 2

Title of Project: Eastern Montana Big Game Surveys

Leader: Don L. Brown

Job Completion Report Job Nos. III-C, IV-A, V-A Investigations Projects

Title of Job: Eastern Montana Deer Population Studies - Checking Station
Analysis

ABSTRACT

At 14 checking stations, 3,298 deer were tallied. A decrease of 337 from last year, however there were twice as many stations in 1953. Overall success in eastern Montana was 67.5% as computed from checking station data. Southeastern Montana averaged a 63% hunter success, and Central Montana averaged 53%.

Hunter origin remained approximately the same as preceding years for which there is information.



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Title of Job: Eastern Montana Deer Population Studies - Checking Station Analysis

DATE: 1954 Hunting Season

PERSONNEL: Checking Station Operators

For the third consecutive year, either sex deer seasons have been held throughout most of eastern Montana. The seasons, as in years past, ranged from 3 days either sex in conjunction with various length buck seasons to straight 30 day either sex seasons. Some areas, although able to support 15 or 30 day either sex seasons, had only 3 or 4 day either sex seasons or buck seasons only, because of local opinions and pressure. Existing information on the mechanics of either sex seasons in established deer populations indicates the fallacy of such opinions. Continued work in the educational aspect of selling these seasons will perhaps eventually bring about the necessary understanding.

OBJECTIVES:

Accumulation and analysis of checking station data applicable to eastern Montana deer population studies.

TECHNIQUES USED:

Checking stations were operated at advantageous points in or adjacent to hunting areas. Data collected consisted of sex, species, age, hunter origin, etc. Operation of the stations was during the days when the greatest number of hunters could be checked.

FINDINGS:

The data from all stations is broken down into areas of coverage. For comparisons of similar data in these areas for the 1953 seasons, refer to P-R Quarterly Vol. IV No. 4, 1953.

LITTLE BELT MOUNTAINS

A buck season from October 15th to November 15th and an either sex season from October 31st to November 15th was held in this area. On Tenderfoot Creek, there was an either sex season from October 1 to November 15. This section deals with the harvest taken from the north side of the Little Belts. Four checking stations were operated a total of 41 days.

UTICA STATION

This station was operated throughout the season to check both deer and elk hunters. Many of the hunters checking through this station were primarily elk hunters, deer hunting being a secondary or casual objective.

The following tables list the deer checked:

<u>Date</u>	<u>Kill</u>	<u>No. Hunters Checked</u>
October 15-30 (Bucks Only)	145	873
October 31 - November 15 (Either Sex)	458	Unknown
Total	603	Unknown

Sex and age breakdown

<u>Adult Male</u>	<u>Young Male</u>	<u>Female</u>	<u>F. Fawn</u>	<u>M. Fawn</u>	<u>Unc. Fawn</u>
132	129	257	25	29	31

The 603 deer checked at Utica is about 100 more than for 1953. Assuming the Utica station kill figures since 1940 are reliable indicators of relative abundance, the data given below suggests that either sex seasons are still applicable to this area.

<u>Year</u>	<u>No. Deer Checked</u>	<u>No. Hunters Checked</u>
1940	156	Unknown
1942	149	"
1943	301	"
1944	54	"
1945	94	"
1946	240	"
1947	205	1766
1948	192	1642
1949	317	1358
1950	247	1679
1951	384	2285
1952	308	2308
1953	507	1216
1954	603	Unknown

(Either sex seasons have only been held in the Belts during the past 3 or 4 years.)

Age and Sex (Utica Station)

Year	1953	1954
Adult Males	224	132
Yearling or Young Males	42	129
Adult Females	190	257
Female Fawn	17	25
Male Fawn	24	29
Unclassified Fawn	10	31
Total	507	603

DRY WOLF-RUNNING WOLF STATION (Operated during either sex only)

	Oct. 31	Nov. 1	2	6	7	11	14
Males	25	1	1	4	10	6	7
Females	154	15	10	20	40	3	12
Fawns	73	7	1	-	-	1	10
Total Deer	252	23	12	24	50	10	29
Total Hunters	389	37	33	91	130	32	89

Comparing this station with last year:

	1953	1954
Males	11	54
Females	229	254
Yearling Males	39	--
Fawn Males	39	1
Fawn Females	30	2
Fawn Unclassified	10	89
Total Deer	358	400
Total Hunters	694	701
% Success	51.6%	57.0%

The two other stations for the area:

ARMINGTON Y (Operated for either sex only)

Date	Oct. 31	Nov. 1	6	7	Total
Adult Male	14	2	6	-	22
Young Male	25	7	5	2	39
Female	71	10	15	3	99
Female Fawn	4	1	2	1	8
Male Fawn	8	6	2	-	16
Total Deer	122	26	30	6	184
Total Hunters	208	34	49	28	319
% Success	59%	76.5%	61%	21.4%	58%

Total deer checked through this station last year:

Adult Males	12
Adult Females	117
Yearling Males	31
Fawn Males	22
Fawn Females	25
Total Deer	207
Total Hunters	349
Success	59.5%

WILLOW CREEK (During either sex only)

October 31	
Male	3
Female	26

Comparing the 1954 kill for the Little Belts with that of 1953:

	1953	1954
Adult Males	258	211
Young Males	112	168
Adult Females	612	636
Fawn Males	61	46
Fawn Females	55	35
Fawn Unclassified	77	120
Total Deer	1,175	1,216
Total Hunters	2,352	*Unknown
% Success	50%	57.5%

* The figure 57.5 is based on the material from the Running Wolf-Dry Wolf and Armington Y Stations. Total hunters are not known for Utica and Willow Creek Stations.

The hunter origin for the Little Belt Mountains during 1954
(based on 1,783 hunters)

0-66 miles from center of hunting area 1,267 or 71%
1,029 from Gt. Falls or 57.5% of the total
42 from Lewistown or 2.4% of the total
238 from the local area or 13.5% of the total

66-99 miles 135 or 7.5%
99 miles and over 381 or 21.2%
These came from many towns, most of which did not occur frequently enough to list

From an overall stand point this year's data for the Little Belts compared quite closely with that of 1953. In general the success of hunters is about the same--50% for 1953 and 57.5% for 1954. The kill differs only by 41 animals. Origin of the hunters compares very closely, indicating the bulk of the hunters (47% in '53 and 57% in '54) hunting in the Little Belts will be from Great Falls. Lewistown, although having nearly 7,000 people, does not contribute a great deal in the harvest of these animals.

MEAGHER COUNTY

(South Side of Little Belts and Castle Mountains)

A station was set up near Harlowton and checked hunters from the South side of the Belts and Castles.

HARLOWTON

Date	October 15	16	17	Total
Adult Males	10	12	25	47
Young Males	38	37	50	125
Total Deer	48	49	75	172
Total Hunters	73	83	193	349
Success	66%	59%	39%	49.5%

In addition the station was operated on November 16th during the either sex season - bucks 1, does 2, fawns 1, hunters checked 6 - of the 349 hunters checked 122 or 35% came from Harlowton and 186 or 53% came from Billings, Roundup and 14 or 4% hunters represented and the remainder of the hunters were from smaller towns not occurring frequently enough to list. To make a comparison with 1953 is rather difficult because of the difference in number of stations and time of operation.

HIGHWOOD MOUNTAINS

The same length and kind of season was held here as was held in the Belt Mountains. The station was the same as the Armington Y and the data was collected at the same time as that for the Belts - north side:

Date	October 31	November 1	6	7	Total
Adult Male	2	-	-	-	
Young Male	4	-	-	-	
Female	14	-	-	-	
Female Fawns	3	-	-	-	
Male Fawns	1	2	-	-	
Total Deer	24	2	-	-	26
Total Hunters	31	2	-	-	33
% Success	77.5	100			79%

For all practical purposes the hunters were from Great Falls. In addition the Armington Y station checked hunters that hunted in widely scattered areas not falling within the general areas listed. This amounted to 9 adult male, 15 yearling male, 23 female, 11 female fawns, 4 male fawns, making a total of 62 deer and 73 hunters.

MISSOURI RIVER BREAKS (North Side)

The area concerned here, had a buck season from October 15th to 28th, and an either sex season from October 29th to 31st, all dates inclusive. Only two stations were operated, one on Willow Creek Road and one $\frac{1}{2}$ mile south of Malta. Again comparison of information is not possible due to the variations in stations and dates of operation.

WILLOW CREEK ROAD STATION

Date	October 15	16	17	29	30	31	Total
Adult Male	44	43	42	7	7	27	
Young Male	16	22	20	13	4	10	
Female	-	-	-	45	37	80	
Fawn Male	-	-	-	6	14	13	
Fawn Female	-	-	-	6	3	9	
Total Deer	60	65	62	76	64	139	466
Total Hunters	109	119	130	128	125	252	863
% Success	55.0	54.6	47.7	59.4	51.2	55.2	51.7

MALTA STATION

Date	October 15	16	17	23	24	29	30	31	Total
Male	15	31	84	0	-	6	19	38	
Female	-	-	-	-	-	3	27	92	
Male Fawn	-	-	-	-	-	-	-	-	
Female Fawn	-	-	-	-	-	-	-	-	
Total Deer	15	31	84	0	-	9	46	130	315
Total Hunters	52	62	227	8	-	19	65	227	660
% Success	29%	50%	37%	0%	-	47.5%	71%	57.5%	48%

Overall success of the combined stations is 51.0% or 781 deer. In addition to the checking stations, Warden DesRosier checked 47 hunters who killed 25 deer:

11 Adult Males (one white-tail)
 12 Adult Females
 2 Male Fawns (one white-tail)

This gives a success ratio of 53% for these hunters, which is very close to that found at the stations.

Regarding the origin of these hunters:

401 or 24.7% were from Glasgow
 295 or 18% were from Malta
 155 or 9.5% were from Havre

The remaining 50% were from other towns in the area: (Nashua, Opheim, Chinook, Plentywood, etc.).

MISSOURI RIVER BREAKS
 (South Side)

In this area west of the Musselshell the season was October 15th to November 15th, bucks, October 31st to November 2nd either sex. East of the Musselshell it was either sex from October 15th to October 31st. Checking stations for this area which also includes the Judith and Moccasin Mountains were operated on Highway 19, north of Lewistown, and at Grassrange.

HIGHWAY 19

Date	October 15	16	17	31	Total
Males	20	29	32	15	
Females	-	-	-	18	
Fawns	-	-	-	3	
Total Deer	20	29	32	36	117
Total Hunters	62	34	47	57	200
% Success	32%	85%	68%	63%	58.5%

GRASSRANGE

Date	October 31
Adult Males	12
Yearling Males	11
Females	11
Male Fawns	2
Female Fawns	1
Total Deer	37
Total Hunters	46
% Success	80%

The total deer checked from this area (Missouri River Breaks) and compared to 1953:

	1953	1954
Males	132	119
Females	63	29
Fawns	26	6
Total Deer	221	154
Total Hunters	460	246
% Success	48.5%	62.5%

Hunter origin for this area:

From Lewistown 210 or 85%

Local - 16 or 6.5%

Remainder from towns not occurring frequently enough to list

SNOWY MOUNTAINS

This area had a buck season from October 15th to November 15th, an either sex season from October 31st to November 2nd, and a white-tail either sex season from November 3rd to November 15th. A station was set up at the old brewery southeast of Lewistown. Information collected is as follows:

Date	October 31	November 1	Total
Males	20	2	
Females	24	1	
Fawns	5	0	
Total Deer	49	3	52*
Total Hunters	139	15	154
% Success	35	20	34

* Includes some white-tail.

Origin of hunters - based on 120:

0-66 miles from center of area 107 hunters
104 of these from Lewistown or 93%
of the total
66-99 miles from center of area 5 hunters
100 miles and over 8 hunters

LOWER MISSOURI AND LOWER YELLOWSTONE RIVERS

In 1953 three stations were operated for a 10 day either sex season. This year only one station was operated for an eight buck season and a three day either sex. Again the presence of several variables makes comparison of year to year data quite difficult.

The following information was gathered at the station one mile west of Nohley:

Date	October 31*	November 5	6	7	Total
Males	20**	6	0	5	31
Females	-	12***	3	4	19
Male Fawns	-	5	2	3	10
Female Fawns	-	3	1	1	5
Total Deer	20	26	6	13	65
Total Hunters	90	53	30	50	130
% Success	22	50	20	26	50

* Bucks Only

** Included one mule deer

*** With antlers

Hunter origin - based on 223 hunters.

Sidney 78 (34.4%)
Fairview 109 (48.2%)
Nohley and vicinity 12 (5.3%)
Other 24 (10.6%)

Comparing the information from the Nohley station last year against this year:

	1953	1954
No. Days Operated	4*	4**
No. Hunters Checked	237	223
No. Deer Checked	92	65
% Success	39	29

* All four days either sex

** One day bucks only, three days either sex

Comparing hunter success from the Nohley station for either sex only, the success is 34% in 1954 and 39% in 1953. But the comparison is made between 4 days of information and 3 days of information. Eliminating the first day of the 1953 season data from the Nohley station, the hunter success percentages become 35% for 1953 and 34% for 1954.

Hunter origin cannot readily be compared because sufficient breakdown is not available for 1953.

Hunter success is low in this area because the majority of the hunting area is white-tail habitat (river bottom) and the animals involved are white-tail. For this reason longer either sex seasons may aid in increasing the harvest. Hunting with shot-gun may also be instrumental in aiding in a larger kill. It is quite apparent a larger harvest is needed on both the lower Yellowstone and Missouri Rivers from the following facts. The areas in question are excellent white-tail habitat. Hunter harvests have never been very high as indicated by checking station data. Deer depredations on bottom land crops (alfalfa, corn, etc.) has occurred in the past and is occurring now. There is a strong possibility, with the filling of Garrison Dam in North Dakota on the Missouri River, these areas may receive additional white-tail from the resulting flooded areas along the Missouri in North Dakota. From this viewpoint very liberal seasons and methods of harvest should be established in these areas for 1955.

ASHLAND DISTRICT

For the third consecutive year, a 30 day either sex deer season was held in this area. The area involved in the first either sex season (1952), included approximately 1,584 square miles (this embodies the area referred to as the Ashland District). In 1953 the area of the 30 day either sex season was extended to include about 2,484 square miles. In 1954, the 30 day either sex season extended over an area of 12,024 square miles. In 1955 plans are for a 30 day either sex season to cover approximately 22,000 square miles. This proposed season will cover roughly the area lying east of the Big Horn River and south of the Yellowstone River.

To make comparisons of data gathered at checking stations operated in the Ashland District for the years mentioned would be rather difficult, since there are a number of variables.

This is illustrated in the following table:

Year	Area (Sq. Mi.)	No.		Hunters Checked	Deer Checked	% Success
		Checking Station	Man Days			
1952	1,584	2	28	1,468	862	58.7
1953	2,484	3	18	Unknown	720	Unknown
1954	3,996	2	12	1,171	787	58.8

In order that future comparisons can be made, it is suggested that stations be operated in almost exactly the same manner and place year after year. The following table illustrates how this might be done for such yearly comparisons. For all practical purposes, these stations were operated from 8 a. m. until such time in the evening when hunters are no longer coming through in any appreciable numbers. The station on Highway 212 was about 60 miles from the main hunting areas and consequently must remain open until as late as midnite on busy days like Sunday.

HIGHWAY 212 (1954 - 30 days either sex)*

Day	Bucks	Does	M. Fawns	F. Fawns	Hunters	% Success
Fri. Oct. 15	30	15	1	1	94	50
Sat. " 16	58	42	5	4	161	68
Sun. " 17	104	74	7	4	301	63
Sat. Nov. 13	8	6	5	0	33	57
Sun. " 14	41	38	8	10	152	64
Mon. " 15	0	2	1	0	4	75

ASHLAND STATION

Fri. Oct. 15	20	18	0	3	52	79
Sat. " 16	49	18	6	1	96	77
Sun. " 17	101	48	5	5	218	73
Sat. Nov. 13	9	2	1	0	13	92
Sun. " 14	18	7	6	3	44	77
Mon. " 15	2	1	0	0	5	60

* The station on Highway 212 is located about 4 miles south of Miles City at the Highway Department's weighing station. The Ashland station is located in the town of Ashland at the junction of Highway 8 and the Tongue River road near the cafe.

A comparison of the kill composition for 1952-53-54:

	1952	1953	1954
Bucks	349	339	440
Does	398	311	271
Male Fawns	60	37	45
Female Fawns	55	33	31
Total	862	720	787

It is interesting to note the difference in the B:D ratios. Hunter selectivity is possibly in some measure responsible. That is, a greater number of bucks will be harvested during either sex seasons, provided the either sex season is not in its first year and

the hunters using the area are conditioned to either sex seasons.

Table I shows hunter origin in the Ashland area for the past three hunting seasons, and Table II gives hunter origin for the past season. Figures in Table I in parenthesis are the number of hunters the percentages are based on.

TABLE I

Miles from Center of Hunting Area	1952 (764)	1953 (827)	1954 (1157)
0 - 50 miles	6%	5%	2%
50 - 100 miles	37%	42%	45%
100 - 150 miles	32%	40%	32%
150 miles and over	25%	12%	20%

TABLE II

Hunter origin for 1954 season - based on 1,157 hunters

0 - 50 miles	
28 hunters - local	
50 - 100 miles	
517 hunters (440 or 85% from Miles City)	
100 - 150 miles	
375 hunters (300 or 80% from Billings)	
150 miles and over	
237 hunters (95 or 40% from Wolf Point)	

Table I indicates during the past three years, the harvest for the area has been accomplished largely by Miles City and Billings hunters. It is worthwhile to mention, the road between Ashland and Billings is completely oiled. This was finished during the past summer. There was, however, no great increase in the number of hunters from Billings this year over last year.

It will probably be necessary to operate these stations for several more years in order to establish definite hunter-harvest patterns and trends. It would also be advantageous to have lighting facilities at all checking stations.

The following information was collected between 9 a. m. - 12 noon and 2 p. m. and 4 p. m. on Sarpy Creek in Rosebud County on October 17th (Sunday) by W. S. Maloit, Deputy Game Warden at Forsyth.

Number of hunters checked	104
Number of deer checked	20
Percent success	19%

Kill Composition	
Bucks	13
Does	3
Fawns	4

Hunter Origin	
Billings	65 (62%)
Hysham	26 (25%)
Other	13 (12%)

DISCUSSION AND CONCLUSIONS:

At 14 checking stations a total of 3,298 deer were checked. At 28 stations in 1953, 3,635 deer were checked. Although the number of hunters checked for both years is not complete, it can probably be used as an index on an area-wide basis. In 1953 a total of 6,662 hunters were checked, while this year 4,870 were checked. Computing hunter success for eastern Montana from these figures:

1953 - hunter success - 54.5%

1954 - hunter success - 67.5%

Separating the 1954 figures into general areas for success only:

CENTRAL MONTANA

Belts north side:	584 deer, 1,020 hunters - 57% success
Belts south side:	172 deer, 349 hunters - 67% success
Snowy Mtns:	52 deer, 154 hunters - 34% success
Highwood Mtns:	26 deer, 33 hunters - 79% success
Overall:	834 deer, 1,556 hunters - 53% success

MISSOURI BREAKS

North side:	806 deer, 1,570 hunters - 51% success
South side:	154 deer, 246 hunters - 62% success
Overall:	960 deer, 1,816 hunters - 53% success

LOWER YELLOWSTONE AND LOWER MISSOURI RIVERS

Nohley:	65 deer, 223 hunters - 29% success
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ASHLAND DISTRICT

Ashland:	787 deer, 1,171 hunters - 67% success
Sarpy Creek:	20 deer, 104 hunters - 19% success
Overall:	807 deer, 1,275 hunters - 63% success

In analyzing the hunter success data, several variables or introduced errors become apparent. The numbers of stations and the time or length of operation is not comparable to previous years. Opening days (i.e., season opened on Wednesday in 1952, Thursday in 1953, and on Friday in 1954) have not been consistent. This variable will never be eliminated as long as the season opens on the same date and not day every year.

Hunter origin for each major hunting area has remained more or less the same from year to year. For example the Ashland district receives the bulk of its hunters from Miles City and Billings. The Belt Mountains, north side, receives a large portion of the hunters from Great Falls.

Comparison of B:D ratios for the areas in general, indicate the harvest of does exceeds that of bucks. From a management standpoint this is satisfactory since any area having a 1:1 sex ratio is supporting surplus bucks. This year in the Ashland district more bucks were harvested than does. This may reflect a surplus of bucks or a high degree of hunter selectivity or both. Field observations have not indicated a lopsided sex ratio, leaving the selectivity of hunters as the probable cause. Ascertaining buck:doe ratios from checking station data under any circumstances is at best hazardous.

Up to the present, it is believed the types of seasons held in eastern Montana have not been detrimental to the deer populations. It is believed that some areas could have longer either sex seasons; these are the areas that have had only two or three day either sex seasons in conjunction with 15 or 30 day buck seasons.

RECOMMENDATIONS:

It is recommended either sex seasons of at least 15 days duration be continued throughout eastern Montana, subject to change as subsequent information warrants.

ACKNOWLEDGEMENTS:

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